

a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;

a pair of light beam detecting devices configured to detect the light beam, said pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting devices to when the light beam is detected by a second of said pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing of image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification error of the light beam in the main scanning direction;

a magnification correcting device configured to correct the magnification error by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing device; and

a visualizing device configured to visualize an image formed on the image carrier after the magnification error is corrected,

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wherein said time difference determining device determines a time difference by counting clock pulses after lowering a light beam deflection speed of said light beam deflecting device to a prescribed speed.

16. (Amended) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

a plurality of light beam generating devices configured to generate a plurality of light beams;

a plurality of light beam modulating devices configured to modulate the plurality of light beams in accordance with an applicable mono color image signal at prescribed write clock frequencies;

at least one light beam deflecting device configured to rotate by a prescribed rotation number and deflect the plurality of light beams so as to scan an image carrier in a main scanning direction;

at least one pair of light beam detecting devices configured to detect the plurality of light beams, said at least one pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said at least one pair of light beam detecting devices to when the light beam is detected by a second of said at least one pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing during image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification errors of the light beams in the main scanning direction;

a magnification correcting device configured to correct the magnification errors by changing both of the prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels based on a result of comparison between the time difference signal and the reference time difference signal by the comparing device; and

a visualizing device configured to visualize and superimpose different mono color images formed on the image carrier after the magnification errors are corrected,

B2nd wherein said time difference determining device determines a time difference by counting clock pulses after lowering a light beam deflection speed of said at least one light beam deflecting device to a prescribed speed.

26. (Amended) The image forming apparatus according to claim 16, wherein said magnification correcting device changes the prescribed rotation number of said at least one light beam deflecting device if the magnification errors cannot completely be corrected only by changing the prescribed write clock frequencies.

B² 27. (Amended) The image forming apparatus according to claim 25, wherein the prescribed rotation number is changed when said magnification correcting device executes correction of the magnification errors and a prescribed amount of the magnification errors remain.

28. (Amended) The image forming apparatus according to claim 26, wherein the prescribed rotation number is changed when said magnification correcting device executes correction of the magnification errors and a prescribed amount of the magnification errors remain.

36. (Amended) An image forming apparatus comprising:

- a light beam generating device configured to generate a light beam;
- a light beam modulating device configured to modulate the light beam in accordance with an image signal at a prescribed write clock frequency;
- B³* a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;

an optical unit configured to include an $f\theta$ lens configured to convert the light beam from substantially a uniform angular speed to substantially a uniform speed;

a temperature detecting device configured to detect temperature of said optical unit;

a magnification correcting device configured to correct magnification error of the

light beam in the main scanning direction by changing the prescribed write clock frequency

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a visualizing device configured to visualize an image formed on the image carrier,

wherein the temperature of said optical unit is a temperature of said $f\theta$ lens.

38. (Canceled).

39. (Amended) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

a plurality of light beam generating devices configured to generate a plurality of light beams;

a plurality of light beam modulating devices configured to modulate the plurality of light beams, respectively, in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;

B⁴ at least one light beam deflecting device configured to rotate by a prescribed rotation number and deflect the plurality of light beams so as to scan an image carrier in a main scanning direction;

at least one optical unit configured to include an $f\theta$ lens configured to convert the plurality of light beams from substantially the uniform angular speed to substantially the uniform speed;

at least one temperature detecting device configured to detect temperature of the optical unit;

a magnification correcting device configured to correct the magnification errors in the main scanning direction by changing the plurality of write clock frequencies of the plurality of laser beams and the prescribed rotation number of said at least one light beam deflecting device to prescribed levels in accordance with the temperature of said at least one optical unit; and

a visualizing device configured to visualize and superimpose different mono color images formed on the image carrier after the magnification errors are corrected,

wherein the prescribed rotation number is changed to a substantially smallest level as color deviation does not occur in a sub-scanning direction.

40. (Canceled).

43. (Canceled).

44. (Canceled).

45. (Amended) The image forming apparatus according to claim 15, wherein the prescribed speed of the light beam deflection speed is increased to the prior level after the magnification errors, recognized when the light beam deflection speed is lowered, has been corrected.

46. (Amended) The image forming apparatus according to claim 16, wherein the prescribed speed of the light beam deflection speed is increased to the prior level after the magnification errors, recognized when the light beam deflection speed is lowered, has been corrected.

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49. (Amended) The image forming apparatus according to claim 15, wherein the light beam deflection speed is lowered only when the time difference is to be detected during image formation.

50. (Amended) The image forming apparatus according to claim 16, wherein the light beam deflection speed is lowered only when the time difference is to be detected during image formation.

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53. (Amended) An image forming apparatus comprising:
a light beam generating device configured to generate a light beam;
a light beam modulating device configured to modulate the light beam in accordance with an image signal at a prescribed write clock frequency;
a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;
a pair of light beam detecting devices configured to detect the light beam, said pair of light beam detecting devices being separately positioned in the main scanning direction;
a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting devices to when the light beam is detected by a second of said pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing of image formation;
a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification error of the light beam in the main scanning direction;
a magnification correcting device configured to correct the magnification error by changing the prescribed write clock frequency and the prescribed rotation number to

prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing device; and

a visualizing device configured to visualize an image formed on the image carrier after the magnification error is corrected,

wherein said light beam deflecting device starts rotating at a low speed when the image formation is commenced, and wherein the time difference is then detected.

54. (Amended) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

a plurality of light beam generating devices configured to generate a plurality of light beams;

a plurality of light beam modulating devices configured to modulate the plurality of light beams in accordance with an applicable mono color image signal at prescribed write clock frequencies;

at least one light beam deflecting device configured to rotate by a prescribed rotation number and deflect the plurality of light beams so as to scan an image carrier in a main scanning direction;

at least one pair of light beam detecting devices configured to detect the plurality of light beams, said at least one pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said at least one pair of light beam detecting devices to when the light beam is detected by a second of said at least one pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing during image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification errors of the light beams in the main scanning direction;

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a magnification correcting device configured to correct the magnification errors by changing both of the prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels based on a result of comparison between the time difference signal and the reference time difference signal by the comparing device; and

a visualizing device configured to visualize and superimpose different mono color images formed on the image carrier after the magnification errors are corrected,

wherein said at least one light beam deflecting device starts rotating at a low speed when the image formation is commenced, and wherein the time difference is then detected

59. (Amended) An image forming apparatus comprising:

a light beam generating device configured to generate a light beam;

a light beam modulating device configured to modulate the light beam in accordance with an image signal at a prescribed write clock frequency;

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a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;

a pair of light beam detecting devices configured to detect the light beam, said pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting devices to when the light beam is detected by a second of said pair of light beam detecting devices, said

time difference determining device generating a time difference signal at an optional timing of image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification error of the light beam in the main scanning direction;

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a magnification correcting device configured to correct the magnification error by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing device; and

a visualizing device configured to visualize an image formed on the image carrier after the magnification error is corrected,

wherein a time difference is determined without lowering a light beam deflection speed if the image formation is in progress, and the time difference is compared with a first reference time difference so that only existence of the magnification errors can be recognized.

61. (Amended) An image forming apparatus comprising:

a light beam generating device configured to generate a light beam;

a light beam modulating device configured to modulate the light beam in accordance with an image signal at a prescribed write clock frequency;

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a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;

a pair of light beam detecting devices configured to detect the light beam, said pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting devices to when the light beam is detected by a second of said pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing of image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification error of the light beam in the main scanning direction;

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a magnification correcting device configured to correct the magnification error by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing device; and

a visualizing device configured to visualize an image formed on the image carrier after the magnification error is corrected,

wherein the magnification errors are corrected at a prescribed timing corresponding to an interval of sheets fed to the image carrier.

63. (Amended) An image forming apparatus comprising:

a light beam generating device configured to generate a light beam;

a light beam modulating device configured to modulate the light beam in accordance

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with an image signal at a prescribed write clock frequency;

a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;

a pair of light beam detecting devices configured to detect the light beam, said pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting devices to when the light beam is detected by a second of said pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing of image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification error of the light beam in the main scanning direction;

- a magnification correcting device configured to correct the magnification error by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing device; and

a visualizing device configured to visualize an image formed on the image carrier after the magnification error is corrected,

wherein new sheet feed is stopped when a time difference is substantially different from a reference time difference, and wherein the magnification errors are then corrected.

64. (Amended) An image forming apparatus, comprising:

light beam generating means for generating a light beam;

light beam modulating means for modulating the light beam in accordance with an image signal at a prescribed write clock frequency;

light beam deflecting means for deflecting the light beam for scanning an image carrier in a main scanning direction, said light beam deflecting means rotating by a prescribed rotation number;

a pair of light beam detecting means for detecting the light beam, said pair of light beam detecting means being separately positioned in the main scanning direction; time difference determining means for determining a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting means to when the light beam is detected by a second of said pair of light beam detecting means, said time difference determining means generating a time difference signal at an optional timing of image formation;

comparing means for comparing the time difference signal with a reference time difference signal and recognizing magnification errors of the light beam in the main scanning direction, said reference time difference signal representing preferable magnification in the main scanning direction;

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cnt.* magnification correcting means for correcting the magnification errors by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing means; and

visualizing means for visualizing an image formed on the image carrier after the magnification errors are corrected,

wherein said time difference determining means determines a time difference by counting clock pulses after lowering a light beam deflection speed of said light beam deflecting means to a prescribed speed.

65. (Amended) An image forming apparatus for forming a color image by superimposing a plurality of different mono color images, said image forming apparatus comprising:

light beam generating means for generating a plurality of light beams;

light beam modulating means for modulating the plurality of light beams in accordance with an applicable mono color image signal at prescribed write clock frequencies;

light beam deflecting means for deflecting the plurality of light beams for scanning an image carrier in a main scanning direction, said light beam deflecting means rotating by a prescribed rotation number;

a pair of light beam detecting means for detecting the plurality of light beams, said pair of light beam detecting means being separately positioned in the main scanning direction;

time difference determining means for determining a time period elapsing from when the plurality of light beams are detected by a first of said pair of light beam detecting means to when the plurality of light beams are detected by a second of said pair of light beam detecting means, said time difference determining means generating a time difference signal at an optional timing during image formation;

comparing means for comparing the time difference signal with a reference time difference signal representing preferable magnification for recognizing magnification errors of the plurality of light beams in the main scanning direction;

magnification correcting means for correcting the magnification errors by changing both of the prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels based on a result of comparison between the time difference signal and the reference time difference signal by said comparing means; and

visualizing means for visualizing and superimposing a plurality of different mono color images formed on the image carrier after the magnification errors are corrected,

wherein said time difference determining means determines a time difference by counting clock pulses after lowering a light beam deflection speed of said one light beam deflecting means to a prescribed speed.

66. (Amended) An image forming apparatus, comprising:

light beam generating means for generating a light beam;

light beam modulating means for modulating the light beam in accordance with an image signal at a prescribed write clock frequency;

light beam deflecting means for deflecting the light beam for scanning an image carrier in a main scanning direction, said light beam deflecting means rotating by a prescribed rotation number;

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optical means for converting the light beam from substantially a uniform angular speed to substantially a uniform speed, said optical means including an $f\theta$ lens;

temperature detecting means for detecting temperature of said optical means; magnification correcting means for correcting magnification error of the light beam in the main scanning direction by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels in accordance with the temperature detected by said temperature detecting means; and

visualizing means for visualizing an image formed on the image carrier,

wherein the temperature of said optical unit is a temperature of said $f\theta$ lens.

67. (Amended) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

light beam generating means for generating a plurality of light beams;

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light beam modulating means for modulating the plurality of light beams in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;

light beam deflecting means for deflecting the plurality of light beams for scanning an image carrier in a main scanning direction, said light beam deflecting means rotating by a prescribed rotation number;

optical means for converting the plurality of light beams from substantially a uniform angular speed to substantially a uniform speed, said optical means including an $f\theta$ lens;

temperature detecting means for detecting temperature of said optical means;

image magnification correcting means for correcting magnification errors in the main scanning direction by changing the plurality of write clock frequencies of the plurality of laser beams and the prescribed rotation number of said light beam deflecting means to prescribed levels in accordance with the temperature of said optical unit; and

visualizing means for visualizing and superimposing different mono color images formed on the image carrier after the magnification errors are corrected,

wherein the prescribed rotation number is changed to a substantially smallest level as color deviation does not occur in a sub-scanning direction.

68. (Amended) A method for forming an image, said method comprising the steps of:

generating a light beam;

modulating the light beam in accordance with an image signal at a prescribed write clock frequency;

deflecting the light beam by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

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detecting the light beam at separate positions in the main scanning direction;
determining a time period elapsing from when the light beam is detected at a first of the separate positions to when the light beam is detected by a second of the separate positions;
generating a time difference signal at an optional timing of image formation;
comparing the time difference signal with a reference time difference signal representing preferable magnification;
recognizing magnification errors of the light beam in the main scanning direction based on a result of said comparing;
correcting the magnification errors by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels; and
visualizing an image formed on the image carrier after the magnification errors is corrected,

wherein said light beam deflecting device starts rotating at a low speed when the image formation is commenced, and wherein a time difference is then detected.

69. (Amended) A method for forming a color image by superimposing a plurality of different mono color images, said method comprising the steps of:

generating a plurality of light beams;
modulating the plurality of light beams in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;
deflecting the plurality of light beams by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;
detecting the plurality of light beams at separate positions in the main scanning direction;

determining a time period elapsing from when the plurality of light beams are detected at a first of the separate positions to when the plurality of light beams are detected at a second of the separate positions;

generating a time difference signal at an optional timing during image formation;

comparing the time difference signal with a reference time difference signal representing preferable magnification;

recognizing magnification errors of the plurality of light beams in the main scanning direction based on a result of said comparing;

correcting the magnification errors by changing both of the plurality of prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels; and

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visualizing and superimposing different mono color images formed on the image carrier after said correcting the magnification errors is executed,

wherein said light beam deflecting device starts rotating at a low speed when the image formation is commenced, and wherein a time difference is then detected.

70. (Amended) The method according to claim 68, wherein said correcting the magnification errors includes changing the prescribed rotation number of said light beam deflecting device if the magnification errors cannot completely be corrected only by changing the prescribed write clock frequency.

71. (Amended) The method according to claim 69, wherein said correcting the magnification errors includes changing the prescribed rotation number of said light beam deflecting device if the magnification errors cannot completely be corrected only by changing the plurality of prescribed write clock frequencies.

B¹ 79. (Amended) A method for forming a color image by superimposing different mono color images, said method comprising the steps of:

generating a plurality of light beams;

modulating the plurality of light beams in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;

deflecting the plurality of light beams by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

converting the plurality of light beams using an $f\theta$ lens from substantially a uniform angular speed to substantially a uniform speed;

detecting temperature of said $f\theta$ lens;

correcting the magnification errors in the main scanning direction by changing a plurality of write clock frequencies of the plurality of laser beams and the prescribed rotation number of said light beam deflecting device to prescribed levels in accordance with the temperature detected in said detecting temperature of said $f\theta$ lens; and

visualizing and superimposing different mono color images formed on the image carrier after the magnification errors are corrected,

wherein the prescribed rotation number is lowered to substantially a smallest level as color deviation does not occur in a sub-scanning direction.

B¹² 80. (Canceled).

81. (Amended) The method according to claim 79, wherein the substantially smallest level is increased to a prior level after the magnification errors, recognized when a light beam deflection speed is lowered, has been corrected.

84. (Canceled).

86. (Amended) A method for forming an image, said method comprising the steps

of:

generating a light beam;

modulating the light beam in accordance with an image signal at a prescribed write clock frequency;

deflecting the light beam by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

detecting the light beam at separate positions in the main scanning direction;

determining a time period elapsing from when the light beam is detected at a first of the separate positions to when the light beam is detected by a second of the separate positions;

generating a time difference signal at an optional timing of image formation;

comparing the time difference signal with a reference time difference signal representing preferable magnification;

recognizing magnification errors of the light beam in the main scanning direction based on a result of said comparing;

correcting the magnification errors by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels; and

visualizing an image formed on the image carrier after the magnification errors is corrected,

wherein a time difference is determined without lowering the light beam deflection speed if the image formation is in progress, and wherein a time difference is compared with a first reference time difference so that only existence of the magnification errors can be recognized.

88. (Amended) A method for forming an image, said method comprising the steps

of:

generating a light beam;

modulating the light beam in accordance with an image signal at a prescribed write clock frequency;

deflecting the light beam by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

detecting the light beam at separate positions in the main scanning direction;

determining a time period elapsing from when the light beam is detected at a first of the separate positions to when the light beam is detected by a second of the separate positions;

generating a time difference signal at an optional timing of image formation;

comparing the time difference signal with a reference time difference signal representing preferable magnification;

recognizing magnification errors of the light beam in the main scanning direction based on a result of said comparing;

correcting the magnification errors by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels; and

visualizing an image formed on the image carrier after the magnification errors is corrected,

wherein the magnification errors are corrected at a prescribed timing corresponding to an interval of sheets fed to the image carrier.

90. (Amended) A method for forming an image, said method comprising the steps

of:

generating a light beam;

modulating the light beam in accordance with an image signal at a prescribed write clock frequency;

deflecting the light beam by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

detecting the light beam at separate positions in the main scanning direction;

determining a time period elapsing from when the light beam is detected at a first of the separate positions to when the light beam is detected by a second of the separate positions;

generating a time difference signal at an optional timing of image formation;

comparing the time difference signal with a reference time difference signal representing preferable magnification;

recognizing magnification errors of the light beam in the main scanning direction based on a result of said comparing;

correcting the magnification errors by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels; and

visualizing an image formed on the image carrier after the magnification errors is corrected,

wherein new sheet feed is stopped when a time difference is substantially different from a reference time difference, and wherein the magnification errors are then corrected.

91. (New) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

a plurality of light beam generating devices configured to generate a plurality of light beams;

a plurality of light beam modulating devices configured to modulate the plurality of light beams in accordance with an applicable mono color image signal at prescribed write clock frequencies;

at least one light beam deflecting device configured to rotate by a prescribed rotation number and deflect the plurality of light beams so as to scan an image carrier in a main scanning direction;

at least one pair of light beam detecting devices configured to detect the plurality of light beams, said at least one pair of light beam detecting devices being separately positioned in the main scanning direction;

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a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said at least one pair of light beam detecting devices to when the light beam is detected by a second of said at least one pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing during image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification errors of the light beams in the main scanning direction;

a magnification correcting device configured to correct the magnification errors by changing both of the prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels based on a result of comparison between the time difference signal and the reference time difference signal by the comparing device; and

a visualizing device configured to visualize and superimpose different mono color images formed on the image carrier after the magnification errors are corrected,

wherein a time difference is determined without lowering a light beam deflection speed if the image formation is in progress, and the time difference is compared with a first reference time difference so that only existence of the magnification errors can be recognized.

92. (New) The image forming apparatus according to claim 91, wherein the light beam deflection speed is lowered when said magnification error can be recognized, wherein a new time difference is determined and compared with a second reference time difference, and wherein the magnification errors recognized from comparison between the new time difference and the second reference time difference is corrected.

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93. (New) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

a plurality of light beam generating devices configured to generate a plurality of light beams;

a plurality of light beam modulating devices configured to modulate the plurality of light beams in accordance with an applicable mono color image signal at prescribed write clock frequencies;

at least one light beam deflecting device configured to rotate by a prescribed rotation number and deflect the plurality of light beams so as to scan an image carrier in a main scanning direction;

at least one pair of light beam detecting devices configured to detect the plurality of light beams, said at least one pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said at least one pair of light beam

detecting devices to when the light beam is detected by a second of said at least one pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing during image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification errors of the light beams in the main scanning direction;

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a magnification correcting device configured to correct the magnification errors by changing both of the prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels based on a result of comparison between the time difference signal and the reference time difference signal by the comparing device; and

a visualizing device configured to visualize and superimpose different mono color images formed on the image carrier after the magnification errors are corrected,

wherein the magnification errors are corrected at a prescribed timing corresponding to an interval of sheets fed to the image carrier.

94. (New) The image forming apparatus according to claim 93, wherein the interval of sheets fed is expanded to a prescribed interval if the interval of sheets fed is insufficient to correct the magnification errors.

95. (New) An image forming apparatus for forming a color image by superimposing different mono color images, said image forming apparatus comprising:

a plurality of light beam generating devices configured to generate a plurality of light beams;

a plurality of light beam modulating devices configured to modulate the plurality of light beams in accordance with an applicable mono color image signal at prescribed write clock frequencies;

at least one light beam deflecting device configured to rotate by a prescribed rotation number and deflect the plurality of light beams so as to scan an image carrier in a main scanning direction;

at least one pair of light beam detecting devices configured to detect the plurality of light beams, said at least one pair of light beam detecting devices being separately positioned in the main scanning direction;

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a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said at least one pair of light beam detecting devices to when the light beam is detected by a second of said at least one pair of light beam detecting devices, said time difference determining device generating a time difference signal at an optional timing during image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification errors of the light beams in the main scanning direction;

a magnification correcting device configured to correct the magnification errors by changing both of the prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels based on a result of comparison between the time difference signal and the reference time difference signal by the comparing device; and

a visualizing device configured to visualize and superimpose different mono color images formed on the image carrier after the magnification errors are corrected,

wherein new sheet feed is stopped when a time difference is substantially different from a reference time difference, and wherein the magnification errors are then corrected.

96. (New) A method for forming a color image by superimposing a plurality of different mono color images, said method comprising the steps of:

- generating a plurality of light beams;
- modulating the plurality of light beams in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;
- deflecting the plurality of light beams by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;
- detecting the plurality of light beams at separate positions in the main scanning direction;

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- determining a time period elapsing from when the plurality of light beams are detected at a first of the separate positions to when the plurality of light beams are detected at a second of the separate positions;

- generating a time difference signal at an optional timing during image formation;
- comparing the time difference signal with a reference time difference signal representing preferable magnification;
- recognizing magnification errors of the plurality of light beams in the main scanning direction based on a result of said comparing;
- correcting the magnification errors by changing both of the plurality of prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels; and
- visualizing and superimposing different mono color images formed on the image carrier after said correcting the magnification errors is executed,

wherein a time difference is determined without lowering the light beam deflection speed if the image formation is in progress, and wherein a time difference is compared with a first reference time difference so that only existence of the magnification error can be recognized.

97. (New) The method according to claim 96, wherein the light beam deflection speed is lowered when the magnification errors can be recognized, wherein a new time difference is determined and compared with a second reference time difference, and wherein the magnification errors, recognized from comparison between the new time difference and the second reference time difference, is corrected.

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98. (New) A method for forming a color image by superimposing a plurality of different mono color images, said method comprising the steps of:

generating a plurality of light beams;

modulating the plurality of light beams in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;

deflecting the plurality of light beams by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

detecting the plurality of light beams at separate positions in the main scanning direction;

determining a time period elapsing from when the plurality of light beams are detected at a first of the separate positions to when the plurality of light beams are detected at a second of the separate positions;

generating a time difference signal at an optional timing during image formation;

comparing the time difference signal with a reference time difference signal representing preferable magnification;

recognizing magnification errors of the plurality of light beams in the main scanning direction based on a result of said comparing;

correcting the magnification errors by changing both of the plurality of prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels; and

visualizing and superimposing different mono color images formed on the image carrier after said correcting the magnification errors is executed,

wherein the magnification errors are corrected at a prescribed timing corresponding to an interval of sheets fed to the image carrier.

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99. (New) The method according to claim 98, wherein the interval of sheets fed to the image carrier is expanded to a prescribed interval if the interval of sheets fed to the image carrier is insufficient to correct the magnification errors.

100. (New) A method for forming a color image by superimposing a plurality of different mono color images, said method comprising the steps of:

generating a plurality of light beams;

modulating the plurality of light beams in accordance with an applicable mono color image signal at a plurality of prescribed write clock frequencies;

deflecting the plurality of light beams by rotating a light beam deflecting device by a prescribed rotation number so as to scan an image carrier in a main scanning direction;

detecting the plurality of light beams at separate positions in the main scanning direction;

determining a time period elapsing from when the plurality of light beams are detected at a first of the separate positions to when the plurality of light beams are detected at a second of the separate positions;

generating a time difference signal at an optional timing during image formation; comparing the time difference signal with a reference time difference signal representing preferable magnification; recognizing magnification errors of the plurality of light beams in the main scanning direction based on a result of said comparing; correcting the magnification errors by changing both of the plurality of prescribed write clock frequencies of the plurality of light beams and the prescribed rotation number to prescribed levels; and

visualizing and superimposing different mono color images formed on the image carrier after said correcting the magnification errors is executed,

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cont.*
wherein new sheet feed is stopped when a time difference is substantially different from a reference time difference, and wherein the magnification errors are then corrected.

101. (New) An image forming apparatus comprising:

a light beam generating device configured to generate a light beam;

a light beam modulating device configured to modulate the light beam in accordance with an image signal at a prescribed write clock frequency;

a light beam deflecting device configured to rotate by a prescribed rotation number and deflect the light beam so as to scan an image carrier in a main scanning direction;

a pair of light beam detecting devices configured to detect the light beam, said pair of light beam detecting devices being separately positioned in the main scanning direction;

a time difference determining device configured to determine a time period elapsing from when the light beam is detected by a first of said pair of light beam detecting devices to when the light beam is detected by a second of said pair of light beam detecting devices, said

time difference determining device generating a time difference signal at an optional timing of image formation;

a comparing device configured to compare the time difference signal with a reference time difference signal representing preferable magnification so as to recognize magnification error of the light beam in the main scanning direction;

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Cont*
a magnification correcting device configured to correct the magnification error by changing the prescribed write clock frequency and the prescribed rotation number to prescribed levels based on a result of a comparison between the time difference signal and the reference time difference signal by said comparing device; and

a visualizing device configured to visualize an image formed on the image carrier after the magnification error is corrected.

102. (New) The image forming apparatus of claim 101, wherein said magnification correcting device changes the prescribed rotation number of said light beam deflecting device if the magnification errors cannot completely be corrected only by changing the prescribed write clock frequency.

REMARKS

Favorable reconsideration of this application, in light of the present amendment and the following discussion, is respectfully requested.

Claims 15-37, 39, 41, 42, 45-79, 81-83, and 85-102 are pending in this application, claims 38, 40, 43, 44, 80, and 84 having been canceled, without prejudice or disclaimer, claims 15, 16, 26, 27, 28, 36, 39, 45, 46, 49, 50, 53, 54, 59, 61, 63-69, 79, 81, 86, 88, and 90 having been amended, and new claims 91-102 having been added, by the present amendment.

In the outstanding Office Action, the election of species requirement made in paper no. 12 was withdrawn and all of claims 15-90 were examined, claims 26, 27, 28, 43, and 44